

## CLAIMS

### WHAT IS CLAIMED IS:

- 5 1. A structure of Surface Mount Device Light Emitting Diode (SMD LED),  
including:  
a printed circuit board with a metal reflection cup set concavely on the  
printed circuit board;  
at least one LED chip bonded onto the metal reflection cup and electrically  
10 connected to the printed circuit board; and  
an encapsulant that is formed over the LED chip and protrudes from the  
surface of the printed circuit board for forming a desired shape.
2. The structure of SMD LED as claimed in claim 1, wherein the printed circuit  
board and the encapsulant are composed of two materials that have the same  
15 or similar expansion coefficient and contraction coefficient.
3. The structure of SMD LED as claimed in claim 1, wherein the encapsulant  
can be formed in the shape of a hemisphere, a cylinder, an ellipse, or any  
other shape.
4. The structure of SMD LED as claimed in claim 1, wherein a molding  
20 method is used for forming the encapsulant so that the encapsulant can be  
formed in any shape during the molding.
5. The structure of SMD LED as claimed in claim 1, wherein the encapsulant is  
an epoxy or the like.
6. The structure of SMD LED as claimed in claim 1, wherein a single or a

plurality of grooves is provided at each of the two sides of the printed circuit board.